AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1-18. (cancelled)

19. (previously presented) A method for determining the sequence of a nucleic acid molecule, comprising the steps of:

a) providing a single-stranded form of said nucleic acid molecule;

b) hybridizing a primer to said single stranded form of said nucleic acid molecule to form a template/primer complex;

c) extending the primer by enzymatically extending the primer by the addition of a polymerase and a mixture of at least one nucleotide and at least one labeled derivative of the at least one nucleotide, wherein the at least one labeled derivative of the at least one nucleotide comprises a label formed from a fluorophore linked to the nucleotide via a cleavable link formed from a disulfide bond, and wherein an amount of labeled derivative of the at least one nucleotide in said mixture of the at least one nucleotide and the labeled derivative of the at least one nucleotide is within the range of 1-50 mole-% to avoid quenching and intra-molecular thiol group formation; determining

the type of nucleotide added to the primer after extending said primer, and after determining the type of nucleotide, either cleaving said cleavable link or neutralizing said label by either adding a label-interacting agent or by bleaching said label, before any additional primer extensions can be performed; and

d) repeating step c) at least once.

20. (previously presented) The method according to claim 19, in which the amount of labeled derivative of the at least one nucleotide in said mixture is within the range of 5-50 mole-%.

21. (previously presented) The method according to claim 19, in which the amount of labeled derivative of the at least one nucleotide in said mixture is within the range of 10-50 mole-%.

22. (previously presented) The method according to claim 19, wherein the single-stranded form of said nucleic acid molecule is attached to a carrier.

23. (previously presented) The method according to claim 22, wherein a mechanism for attachment to the carrier is a specific binding to a hydrophobic compound, an oligonucleotide, an antibody or a fragment thereof, a protein, a peptide, an

intercalating agent, biotin, streptavidin or avidin; or covalent coupling using an amino-linker and an epoxy-treated carrier.

24. (previously presented) The method according to claim 23, wherein the carrier is selected from the group of a gel, a solid or porous bead, a surface or a fiber.

25. (previously presented) The method according to claim 19, in which the label is neutralized by bleaching and the bleaching is performed by photo-bleaching.

26. (canceled)

27. (currently amended) The method according to claim [[26]] 19 in which the cleavage is performed by the addition of a reducing agent, thereby exposing a thiol group to provide an exposed thiol group.

28. (previously presented) The method according to claim 27, in which the exposed thiol group is capped by a reagent.

29. (previously presented) The method according to claim 19, in which a linker between a disulfide bridge and the base is shorter than 8 atoms.

30. (previously presented) The method according to claim 19, in which the polymerase extension reaction of step c) is performed at a pH below 7.

31. (previously presented) The method according to claim 19, in which the derivative of said nucleotide is a dideoxynucleotide or an acyclic nucleotide analog.

32. (previously presented) The method according to claim 19, wherein the label is neutralized with an agent and the agent is selected from the group consisting of alkaline phosphatase, PPi-ase, apyrase, dimethylsulfoxide, polyethylene glycol, polyvinylpyrollidone, spermidine, detergents, nonyl phenoxylpolyethoxylethanol, polysorbate 20, $C_{16}H_{22}O(C_2H_4O)_n$ with n being an average of 9.5; proteins that affect secondary structure of DNA, Single Stranded DNA Binding Protein (SSB) and the protein of Gene 32.

33. (currently amended) A method for determining the sequence of a nucleic acid molecule, comprising the steps of:

a) providing a single-stranded form of said nucleic acid molecule;

b) hybridizing a primer to said single stranded form of said nucleic acid molecule to form a template/primer complex;

c) extending the primer ~~by reading the result of the primer extension and preparing for a next cycle~~ by a procedure that consists of:

i) enzymatically extending the primer by the addition of a polymerase and a mixture of at least one nucleotide and at least one labeled derivative of the at least one nucleotide, wherein the at least one labeled derivative of the at least one nucleotide comprises a label formed from a fluorophore linked to the nucleotide via a cleavable link formed from a disulfide bond, and wherein an amount of labeled derivative of the at least one nucleotide in said mixture of the at least one nucleotide and the labeled derivative of the at least one nucleotide is within the range of 1-50 mole-% to avoid quenching and intra-molecular thiol group formation;

ii) determining the type of nucleotide added to the primer;

iii) either cleaving said cleavable link or neutralizing said label by either adding a label-interacting agent or by bleaching said label, before any additional primer extensions can be performed; and

iv) reading a result of the primer extension and preparing for a next cycle by

d) repeating step c) at least once.

34. (previously presented) The method according to claim 33, in which the label is neutralized by bleaching and the bleaching is performed by photo-bleaching.

35. (canceled)

36. (currently amended) The method according to claim [[35]] 33, in which the cleavage is performed by the addition of a reducing agent, thereby exposing a thiol group to provide an exposed thiol group.

37. (previously presented) The method according to claim 36, in which the exposed thiol group is capped by a reagent.

38. (previously presented) The method according to claim 33, in which a linker between a disulfide bridge and the base is shorter than 8 atoms.

39. (previously presented) The method according to claim 33, in which the polymerase extension reaction of step c) is performed at a pH below 7.

40. (previously presented) The method according to claim 33, in which the derivative of said nucleotide is a dideoxynucleotide or an acyclic nucleotide analog.

41. (previously presented) The method according to claim 33, wherein the label is neutralized with an agent and the agent is selected from the group consisting of alkaline phosphatase, PPi-ase, apyrase, dimethylsulfoxide, polyethylene glycol, polyvinylpyrollidone, spermidine, detergents, nonyl phenoxylpolyethoxylethanol, polysorbate 20, $(C_{14}H_{22}O(C_2H_4O)_n)$; proteins that affect secondary structure of DNA, Single Stranded DNA Binding Protein (SSB) and the protein of Gene 32.

42. (currently amended) A method for determining the sequence of a nucleic acid molecule, comprising the steps of:

a) providing a single-stranded form of said nucleic acid molecule;

b) hybridizing a primer to said single stranded form of said nucleic acid molecule to form a template/primer complex;

c) extending the primer by enzymatically extending the primer by the addition of a polymerase and a mixture of at least one nucleotide and at least one labeled derivative of the at least one nucleotide, wherein the at least one labeled derivative of the at least one nucleotide comprises a label formed from a fluorophore linked to the nucleotide via a cleavable link formed

from a disulfide bond, and wherein an amount of labeled derivative of the at least one nucleotide in said mixture of the at least one nucleotide and the labeled derivative of the at least one nucleotide is within the range of 1-50 mole-% to avoid quenching and intra-molecular thiol group formation; determining the type of nucleotide added to the primer after extending said primer, and after determining the type of nucleotide, either cleaving said cleavable link or neutralizing said label by either adding a label-interacting agent or by bleaching said label, before any additional primer extensions can be performed, the cleavage being performed by the addition of a reducing agent, thereby exposing a thiol group to provide an exposed thiol group, the thiol group being capped by a reagent, and a linker between a disulfide bridge and the base is shorter than 8 atoms.

d) repeating step c) at least once.